



National Priorities List (NPL)

You are here: [EPA Home](#) [Superfund Sites](#) [National Priorities List \(NPL\)](#) [HRS Toolbox](#)
Superfund Chemical Data Matrix (SCDM)

Superfund Chemical Data Matrix (SCDM)

The Superfund Chemical Data Matrix (SCDM) is a source for factor values and screening concentration benchmarks that can be applied when evaluating potential National Priorities List (NPL) sites using the Hazard Ranking System (HRS). Factor values are part of the HRS mathematical equation for determining the relative threat posed by a hazardous waste site and reflect hazardous substance characteristics, such as toxicity and persistence in the environment, substance mobility and the potential for bioaccumulation. Screening concentration benchmarks are environment- or health-based substance concentration limits, including some developed by or used in other EPA regulatory programs. SCDM contains HRS factor values and screening concentration benchmarks for hazardous substances that are frequently found at sites evaluated using the HRS, as well as the physical, chemical and radiological data used to calculate those values. The accompanying SCDM Methodology report describes how data are selected or calculated for inclusion in SCDM.

On January 30, 2014, the EPA released an updated SCDM with many revisions to the HRS factor values and benchmarks. The revisions were based on a comprehensive review and update of all the information contained in SCDM. These revisions were necessary because of updates to some of the toxicity data, as well as updates to several of the equations used to determine screening concentration benchmarks. This update also provided increased consistency across EPA programs. One [new entry \(PDF\)](#) (1 pg, 32K) was added in the January 2014 version of SCDM that was not in the 2004 version or in the interim reports published between 2004 and 2014; no entries were removed. Following the January 2014 publication, revisions were made to SCDM on an as-needed basis to reflect changes within the cited references. The current version of SCDM is the June 2014 publication. A [Change Control and Errata Sheet \(PDF\)](#) (3 pg, 98K) is provided to document and track any changes or corrections that have been made since the January 2014 publication; these changes are reflected in the reports below.

Disclaimer

The Superfund Chemical Data Matrix (SCDM) contains factor values and benchmarks used for applying the Hazard Ranking System (HRS) [40 CFR Part 300 Appendix A, 55 FR 51583] to evaluate potential National Priorities List (NPL) sites. The physical, chemical, toxicological and radiological parameters used to calculate the factor values and benchmarks are obtained from references listed in the SCDM Methodology. The references and the data extracted from these references were selected to meet specific HRS requirements and conditions which may not be applicable or representative for other uses. In addition, the parameter values are updated only on an "as needed" basis. As a screening tool, the HRS and SCDM are used for quickly assessing sites at the screening stage and data used to perform this task may not be applicable for other site specific purposes.

The parameter values in SCDM should be used for HRS and NPL purposes only.

You will need Adobe Acrobat Reader to view some of the files on this page.
See [EPA's PDF page](http://www.epa.gov/superfund/sites/npl/hrsres/tools/scdm.htm) to learn more about PDF, and for a link to the free Acrobat Reader. Last updated on Thursday, June 19, 2014

Superfund Chemical Data Matrix Report

SCDM Methodology Report PDF

[Part 1 - Table of Contents and Introduction \(PDF\)](#) (8 pp, 108K)

[Part 2 - Data Selection Methodology \(PDF\)](#) (18 pp, 200K)

[Part 3 - Calculations in SCDM \(PDF\)](#) (23 pp, 348K)

[Part 4 - SCDM Data Reporting and References \(PDF\)](#) (11 pp, 212K)

Appendix A - Chemical Data, Factor Values and Benchmarks for Chemical Substances PDF

[Part 1 - Acenaphthene to Cesium \(PDF\)](#) (74 pp, 667K)

[Part 2 - Cesium 137\(+D\) \(radionuclide\) to Dichloropropane, 1,2 \(PDF\)](#) (74 pp, 628K)

[Part 3 - Dichloropropane, 1,3- to Hexachlorodibenzofuran 1,2,3,7,8,9 \(PDF\)](#) (74 pp, 618K)

[Part 4 - Hexachlorodibenzofuran 2,3,4,6,7,8- to Plutonium 236 \(radionuclide\) \(PDF\)](#) (82 pp, 663K)

[Part 5 - Plutonium 238 \(radionuclide\) to Thorium 231 \(radionuclide\) \(PDF\)](#) (72 pp, 647K)

[Part 6 - Thorium 232 \(radionuclide\) to Zinc 65 \(radionuclide\) and Footnotes \(PDF\)](#) (68 pp, 598K)

[Appendix BI - Hazardous Substance Factor Values \(PDF\)](#) (13 pp, 802K)

[Appendix BII - Hazardous Substance Benchmarks \(PDF\)](#) (29 pp, 1.3MB)

[Appendix C - Hazardous Substance Synonyms Report \(PDF\)](#) (11 pp, 149K)

[Appendix C - Hazardous Substance Synonyms Report \(xls\)](#) (35K)

NOTE: Please do not assume that any substance not listed in the June 2014 SCDM cannot be used for HRS scoring. The number of entries in SCDM was greatly reduced in the 2004 version of SCDM to save resources in developing, updating and tracking changes in chemical properties. If values are needed for a substance that is not listed in the June 2014 SCDM and are thought to be critical to the listing decision, please request the value by calling the SCDM [contact listed below](#). For all technical questions concerning SCDM, please contact the [contact listed below](#).

For SCDM information, contact:

[Linda Gaines, Ph.D., P.E. \(gaines.linda@epa.gov\)](mailto:gaines.linda@epa.gov)

US Environmental Protection Agency

1200 Pennsylvania Avenue, N.W.

Washington, DC 20460

Phone: (703) 603-7189

Email: gaines.linda@epa.gov

3

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethane, 1,1-

CAS Number: 000075-34-3

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	2.0E-01	mg/kg/day	PPRTV
Inhal RfD:		mg/kg/day	
RfC		mg/m ³	
Oral Slope:	5.7E-03	(mg/kg/day) ⁻¹	CALEPA
Oral Wt-of-Evid:	C		CALEPA
IUR:	1.6E-06	(µg/m ³) ⁻¹	CALEPA
IUR Wt-of-Evid:	B		CALEPA
Inhal Slope:	5.6E-03	(mg/kg/day) ⁻¹	CALEPA
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	8.7E+01	days	THOMAS
Photolysis:		days	
Biodeg:	1.5E+02	days	HEDR
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	9.4E-01	days	THOMAS
Photolysis:		days	
Biodeg:	1.5E+02	days	HEDR
Radio:		days	
Log Kow:	1.7E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	9.8E+01	
Density:	1.1E+00	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	2.2E+02	Torr	PHYSPROP
Henry's Law:	5.6E-03	atm-m ³ /mol	PHYSPROP
Water Solub:	5.0E+03	mg/L	PHYSPROP
Distrib Coef:	4.8E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	1.7E+00		EPI_EXP
Water Solub:	5.0E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-9.6E+01	°C
Boiling Point:	5.7E+01	°C
Formula:	C ₂ H ₄ Cl ₂	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethane, 1,1-

CAS Number: 000075-34-3

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10	Toxicity:	10	Toxicity:	10
Gas Mobility:	1	Water Solub:	5.0E+03		
Gas Migration:	17	Distrib:	4.8E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10	Toxicity:	10	Fresh Tox:	0
				Salt Tox:	0
Persistence		Persistence		Persistence	
River:	0.4	River:	0.4	River:	0.4
Lake:	1	Lake:	1	Lake:	1
		Bioaccumulation		Bioaccumulation	
		Fresh:	5	Fresh:	5
		Salt:	5	Salt:	5

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3	MCL/MCLG:		mg/L	Cancer Risk:	1.1E+02	mg/kg	MCL:		pCi/L
Cancer Risk:	1.5E-03	mg/m3	Cancer Risk:	1.1E-02	mg/L	Non Cancer Risk:	1E+04	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:		mg/m3	Non Cancer Risk:	3E+00	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:		mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:	1.1E-02	mg/L	Cancer Risk:	5.5E-01	mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	3E+00	mg/L	Non Cancer Risk:	2E+02	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,1-

CAS Number: 000075-35-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	5.0E-02	mg/kg/day	IRIS
Inhal RfD:	5.7E-02	mg/kg/day	IRIS
RfC	2.0E-01	mg/m ³	IRIS
Oral Slope:		(mg/kg/day) ⁻¹	
Oral Wt-of-Evid:			
IUR:		(µg/m ³) ⁻¹	
IUR Wt-of-Evid:			
Inhal Slope:		(mg/kg/day) ⁻¹	
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	9.0E+03	µg/L	ECOTOX
Salt Ecol LC50:	1.0E+05	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	8.7E+01	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+02	days	HEDR
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	9.3E-01	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+02	days	HEDR
Radio:		days	
Log Kow:	2.1E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	9.6E+01	
Density:	1.2E+00	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	6.0E+02	Torr	PHYSPROP
Henry's Law:	2.6E-02	atm-m ³ /mol	PHYSPROP
Water Solub:	2.4E+03	mg/L	PHYSPROP
Distrib Coef:	4.8E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	2.1E+00		EPI_EXP
Water Solub:	2.4E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-1.2E+02	°C
Boiling Point:	3.1E+01	°C
Formula:	C2H2Cl2	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,1-

CAS Number: 000075-35-4

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10	Toxicity:	10	Toxicity:	10
Gas Mobility:	1	Water Solub:	2.4E+03		
Gas Migration:	17	Distrib:	4.8E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10	Toxicity:	10	Fresh Tox:	100
				Salt Tox:	1
Persistence		Persistence		Persistence	
River:	0.4	River:	0.4	River:	0.4
Lake:	1	Lake:	1	Lake:	1
		Bioaccumulation		Bioaccumulation	
		Fresh:	50	Fresh:	50
		Salt:	50	Salt:	50

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/ NESHAPS:		µg/m3	MCL/ MCLG:	7E-03	mg/L	Cancer Risk:		mg/kg	MCL:		pCi/L
Cancer Risk:		mg/m3	Cancer Risk:		mg/L	Non Cancer Risk:	3E+03	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:	2E-01	mg/m3	Non Cancer Risk:	7E-01	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:	7E-03	mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:		mg/L	Cancer Risk:		mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	7E-01	mg/L	Non Cancer Risk:	6E+01	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,2-cis-

CAS Number: 000156-59-2

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	2.0E-03	mg/kg/day	IRIS
Inhal RfD:		mg/kg/day	
RfC		mg/m ³	
Oral Slope:		(mg/kg/day) ⁻¹	
Oral Wt-of-Evid:			
IUR:		(µg/m ³) ⁻¹	
IUR Wt-of-Evid:			
Inhal Slope:		(mg/kg/day) ⁻¹	
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	8.7E+01	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	9.4E-01	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.0E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	9.6E+01	
Density:	1.2E+00	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	2.0E+02	Torr	PHYSPROP
Henry's Law:	4.0E-03	atm-m ³ /mol	PHYSPROP
Water Solub:	6.4E+03	mg/L	PHYSPROP
Distrib Coef:	6.0E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	2.0E+00		EPI_EXP
Water Solub:	6.4E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-8.0E+01	°C
Boiling Point:	6.0E+01	°C
Formula:	C ₂ H ₂ Cl ₂	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,2-cis-

CAS Number: 000156-59-2

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	1000	Toxicity:	1000	Toxicity:	1000
Gas Mobility:	1	Water Solub:	6.4E+03		
Gas Migration:	17	Distrib:	6.0E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	1000	Toxicity:	1000	Fresh Tox:	0
				Salt Tox:	0
Persistence		Persistence		Persistence	
River:	0.4	River:	0.4	River:	0.4
Lake:	1	Lake:	1	Lake:	1
		Bioaccumulation		Bioaccumulation	
		Fresh:	50	Fresh:	50
		Salt:	50	Salt:	50

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3	MCL/MCLG:	7E-02	mg/L	Cancer Risk:		mg/kg	MCL:		pCi/L
Cancer Risk:		mg/m3	Cancer Risk:		mg/L	Non Cancer Risk:	1E+02	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:		mg/m3	Non Cancer Risk:	3E-02	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:	7E-02	mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:		mg/L	Cancer Risk:		mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	3E-02	mg/L	Non Cancer Risk:	2E+00	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 06/20/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,2-trans-

CAS Number: 000156-60-5

TOXICITY			
Parameter	Value	Unit	Source
Oral RfD:	2.0E-02	mg/kg/day	IRIS
Inhal RfD:	2.2E-01	mg/kg/day	ATSDR-Int
RfC	7.9E-01	mg/m ³	ATSDR-Int
Oral Slope:		(mg/kg/day) ⁻¹	
Oral Wt-of-Evid:			
IUR:		(µg/m ³) ⁻¹	
IUR Wt-of-Evid:			
Inhal Slope:		(mg/kg/day) ⁻¹	
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	1.7E+05	µg/L	ECOTOX
Salt Ecol LC50:		µg/L	

PERSISTENCE			
Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	8.7E+01	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	9.3E-01	days	THOMAS
Photolysis:		days	
Biodeg:		days	
Radio:		days	
Log Kow:	2.0E+00		EPI_EXP

PHYSICAL CHARACTERISTICS			
Parameter	Value	Unit	
Metal Contain:	No		
Organic:	Yes		
Gas:	Yes		
Particulate:	No		
Radionuclide:	No		
Rad. Element:	No		
Molecular Weight:	9.6E+01		
Density:	1.2E+00	g/mL @	20.0 °C

MOBILITY			
Parameter	Value	Unit	Source
Vapor Press:	3.3E+02	Torr	PHYSPROP
Henry's Law:	9.3E-03	atm-m ³ /mol	PHYSPROP
Water Solub:	4.5E+03	mg/L	PHYSPROP
Distrib Coef:	6.0E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION			
Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	2.0E+00		EPI_EXP
Water Solub:	4.5E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA		
Melting Point:	-4.9E+01	°C
Boiling Point:	4.8E+01	°C
Formula:	C2H2Cl2	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 06/20/2014

Publication Date: 06/20/2014

Chemical: Dichloroethylene, 1,2-trans-

CAS Number: 000156-60-5

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	100	Toxicity:	100	Toxicity:	100
Gas Mobility:	1	Water Solub:	4.5E+03		
Gas Migration:	17	Distrib:	6.0E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	100	Toxicity:	100	Fresh Tox:	1
				Salt Tox:	1
Persistence		Persistence		Persistence	
River:	0.4	River:	0.4	River:	0.4
Lake:	1	Lake:	1	Lake:	1
		Bioaccumulation		Bioaccumulation	
		Fresh:	50	Fresh:	50
		Salt:	50	Salt:	50

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/ NESHAPS:		µg/m3	MCL/ MCLG:	1E-01	mg/L	Cancer Risk:		mg/kg	MCL:		pCi/L
Cancer Risk:		mg/m3	Cancer Risk:		mg/L	Non Cancer Risk:	1E+03	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:	8E-01	mg/m3	Non Cancer Risk:	3E-01	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:	1E-01	mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:		mg/L	Cancer Risk:		mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	3E-01	mg/L	Non Cancer Risk:	2E+01	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Trichloroethylene

CAS Number: 000079-01-6

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	5.0E-04	mg/kg/day	IRIS
Inhal RfD:	5.7E-04	mg/kg/day	IRIS
RfC	2.0E-03	mg/m ³	IRIS
Oral Slope:	4.6E-02	(mg/kg/day) ⁻¹	IRIS
Oral Wt-of-Evid:	A		IRIS
IUR:	4.1E-06	(µg/m ³) ⁻¹	IRIS
IUR Wt-of-Evid:	A		IRIS
Inhal Slope:	1.4E-02	(mg/kg/day) ⁻¹	IRIS
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	1.9E+03	µg/L	ECOTOX
Salt Ecol LC50:	1.2E+04	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:	3.2E+02	days	HEDR
Volatility:	1.0E+02	days	THOMAS
Photolysis:		days	
Biodeg:	3.6E+02	days	HEDR
Radio:		days	
RIVER- Halflives			
Hydrolysis:	3.2E+02	days	HEDR
Volatility:	1.1E+00	days	THOMAS
Photolysis:		days	
Biodeg:	3.6E+02	days	HEDR
Radio:		days	
Log Kow:	2.4E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.3E+02	
Density:	1.4E+00	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	6.9E+01	Torr	PHYSPROP
Henry's Law:	9.8E-03	atm-m ³ /mol	PHYSPROP
Water Solub:	1.2E+03	mg/L	PHYSPROP
Distrib Coef:	9.2E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	1.7E+01		ECOTOX
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:	1.7E+01		ECOTOX
Salt BCF:			
Log Kow:	2.4E+00		EPI_EXP
Water Solub:	1.2E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-8.4E+01	°C
Boiling Point:	8.7E+01	°C
Formula:	C2HCl3	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Trichloroethylene

CAS Number: 000079-01-6

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	1000	Toxicity:	1000	Toxicity:	1000
Gas Mobility:	1	Water Solub:	1.2E+03		
Gas Migration:	17	Distrib:	9.2E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	1000	Toxicity:	1000	Fresh Tox:	100
				Salt Tox:	10
Persistence		Persistence		Persistence	
River:	0.4	River:	0.4	River:	0.4
Lake:	1	Lake:	1	Lake:	1
		Bioaccumulation		Bioaccumulation	
		Fresh:	50	Fresh:	50
		Salt:	50	Salt:	50

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3	MCL/MCLG:	5E-03	mg/L	Cancer Risk:	8.3E+00	mg/kg	MCL:		pCi/L
Cancer Risk:	4E-04	mg/m3	Cancer Risk:	1.0E-03	mg/L	Non Cancer Risk:	3E+01	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:	2E-03	mg/m3	Non Cancer Risk:	7E-03	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:	5E-03	mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:	1.0E-03	mg/L	Cancer Risk:	6.8E-02	mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	7E-03	mg/L	Non Cancer Risk:	6E-01	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

13

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Vinyl Chloride

CAS Number: 000075-01-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	3.0E-03	mg/kg/day	IRIS
Inhal RfD:	2.8E-02	mg/kg/day	IRIS
RfC	1.0E-01	mg/m ³	IRIS
Oral Slope:	7.2E-01	(mg/kg/day) ⁻¹	IRIS
Oral Wt-of-Evid:	A		IRIS
IUR:	4.4E-06	(µg/m ³) ⁻¹	IRIS
IUR Wt-of-Evid:	A		IRIS
Inhal Slope:	1.5E-02	(mg/kg/day) ⁻¹	IRIS
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:		µg/L	
Salt Ecol LC50:		µg/L	

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	1.7E-01	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+02	days	HEDR
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	1.7E-01	days	THOMAS
Photolysis:		days	
Biodeg:	1.8E+02	days	HEDR
Radio:		days	
Log Kow:	1.6E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	6.2E+01	
Density:	9.1E-01	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	2.9E+03	Torr	PHYSPROP
Henry's Law:	2.7E-02	atm-m ³ /mol	PHYSPROP
Water Solub:	8.8E+03	mg/L	PHYSPROP
Distrib Coef:	3.3E+00	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:			
Salt BCF:			
ENVIRONMENTAL			
Fresh BCF:			
Salt BCF:			
Log Kow:	1.6E+00		EPI_EXP
Water Solub:	8.8E+03		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-1.5E+02	°C
Boiling Point:	-1.3E+01	°C
Formula:	C2H3Cl	

CLASS INFORMATION

Parent Substance

SUPERFUND CHEMICAL DATA MATRIX

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Vinyl Chloride

CAS Number: 000075-01-4

ASSIGNED FACTOR VALUES

AIR PATHWAY		GROUND WATER PATHWAY		SOIL EXPOSURE PATHWAY	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10000	Toxicity:	10000	Toxicity:	10000
Gas Mobility:	1	Water Solub:	8.8E+03		
Gas Migration:	17	Distrib:	3.3E+00		
		Geo Mean Sol:			
		Mobility			
		Liquid Karst:	1.0E+00		
		Non Karst:	1.0E+00		
		Non Liq Karst:	1.0E+00		
		Non Karst:	1.0E+00		

SURFACE WATER PATHWAY

DRINKING WATER		HUMAN FOOD CHAIN		ENVIRONMENTAL	
Parameter	Value	Parameter	Value	Parameter	Value
Toxicity:	10000	Toxicity:	10000	Fresh Tox:	0
				Salt Tox:	0
Persistence		Persistence		Persistence	
River:	0.0007	River:	0.0007	River:	0.0007
Lake:	0.07	Lake:	0.07	Lake:	0.07
		Bioaccumulation		Bioaccumulation	
		Fresh:	5	Fresh:	5
		Salt:	5	Salt:	5

BENCHMARKS

AIR PATHWAY			GROUND WATER PATHWAY			SOIL EXPOSURE PATHWAY			RADIONUCLIDE		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3	MCL/MCLG:	2E-03	mg/L	Cancer Risk:	9.3E-02	mg/kg	MCL:		pCi/L
Cancer Risk:	1.6E-04	mg/m3	Cancer Risk:	1.7E-05	mg/L	Non Cancer Risk:	2E+02	mg/kg	UMTRCA:		pCi/kg
Non Cancer Risk:	1E-01	mg/m3	Non Cancer Risk:	4E-02	mg/L				CANCER RISK		
									Air:		pCi/m3
									DW:		pCi/L
									FC:		pCi/kg
									Soil Ing:		pCi/kg
									Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER			HUMAN FOOD CHAIN			ENVIRONMENTAL		
Parameter	Value	Unit	Parameter	Value	Unit	Parameter	Value	Unit
MCL/MCLG:	2E-03	mg/L	FDAAL:		ppm	ACUTE		
Cancer Risk:	1.7E-05	mg/L	Cancer Risk:	4.3E-03	mg/kg	Fresh CMC:		µg/L
Non Cancer Risk:	4E-02	mg/L	Non Cancer Risk:	4E+00	mg/kg	Salt CMC:		µg/L
						CHRONIC		
						Fresh CCC:		µg/L
						Salt CCC:		µg/L

Last Modified Date: 01/30/2014

Publication Date:

06/20/2014

Chemical: Tetrachloroethylene

CAS Number:

000127-18-4

TOXICITY

Parameter	Value	Unit	Source
Oral RfD:	6.0E-03	mg/kg/day	IRIS
Inhal RfD:	1.1E-02	mg/kg/day	IRIS
RfC	4.0E-02	mg/m ³	IRIS
Oral Slope:	2.1E-03	(mg/kg/day) ⁻¹	IRIS
Oral Wt-of-Evid:	B		IRIS
IUR:	2.6E-07	(µg/m ³) ⁻¹	IRIS
IUR Wt-of-Evid:	C		IRIS
Inhal Slope:	9.1E-04	(mg/kg/day) ⁻¹	IRIS
Oral ED10:		mg/kg/day	
Oral ED10 Wgt:			
Inhal ED10:		mg/kg/day	
Inhal ED10 Wgt:			
Oral LD50:		mg/kg	
Dermal LD50:		mg/kg	
Gas Inhal LC50:		ppm	
Dust Inhal LC50:		mg/L	
ACUTE			
Fresh CMC:		µg/L	
Salt CMC:		µg/L	
CHRONIC			
Fresh CCC:		µg/L	
Salt CCC:		µg/L	
Fresh Ecol LC50:	1.6E+03	µg/L	ECOTOX
Salt Ecol LC50:	3.3E+02	µg/L	ECOTOX

PERSISTENCE

Parameter	Value	Unit	Source
LAKE- Halflives			
Hydrolysis:		days	
Volatility:	1.1E+02	days	THOMAS
Photolysis:		days	
Biodeg:	2.5E+01	days	CHEMFATE
Radio:		days	
RIVER- Halflives			
Hydrolysis:		days	
Volatility:	1.2E+00	days	THOMAS
Photolysis:		days	
Biodeg:	2.5E+01	days	CHEMFATE
Radio:		days	
Log Kow:	3.4E+00		EPI_EXP

PHYSICAL CHARACTERISTICS

Parameter	Value	Unit
Metal Contain:	No	
Organic:	Yes	
Gas:	Yes	
Particulate:	No	
Radionuclide:	No	
Rad. Element:	No	
Molecular Weight:	1.6E+02	
Density:	1.6E+00	g/mL @ 20.0 °C

MOBILITY

Parameter	Value	Unit	Source
Vapor Press:	1.8E+01	Torr	PHYSPROP
Henry's Law:	1.7E-02	atm-m ³ /mol	PHYSPROP
Water Solub:	2.0E+02	mg/L	PHYSPROP
Distrib Coef:	1.4E+01	ml/g	CALC
Geo Mean Sol:		mg/L	

BIOACCUMULATION

Parameter	Value	Unit	Source
FOOD CHAIN			
Fresh BCF:	4.9E+01		ECOTOX
Salt BCF:	4.0E+02		ECOTOX
ENVIRONMENTAL			
Fresh BCF:	4.9E+01		ECOTOX
Salt BCF:	4.0E+02		ECOTOX
Log Kow:	3.4E+00		EPI_EXP
Water Solub:	2.0E+02		PHYSPROP
Geo Mean Sol:		mg/L	

OTHER DATA

Melting Point:	-2.2E+01	°C
Boiling Point:	1.2E+02	°C
Formula:	C2Cl4	

CLASS INFORMATION

Parent Substance

Last Modified Date: 01/30/2014

Publication Date: 06/20/2014

Chemical: Tetrachloroethylene

CAS Number: 000127-18-4

ASSIGNED FACTOR VALUES

AIR PATHWAY

Parameter	Value
Toxicity:	100
Gas Mobility:	1
Gas Migration:	17

GROUND WATER PATHWAY

Parameter	Value
Toxicity:	100
Water Solub:	2.0E+02
Distrib:	1.4E+01
Geo Mean Sol: Mobility	
Liquid Karst:	1.0E+00
Non Karst:	1.0E-02
Non Liq Karst:	1.0E+00
Non Karst:	1.0E-02

SOIL EXPOSURE PATHWAY

Parameter	Value
Toxicity:	100

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value
Toxicity:	100
Persistence	
River:	0.4
Lake:	1

HUMAN FOOD CHAIN

Parameter	Value
Toxicity:	100
Persistence	
River:	0.4
Lake:	1
Bioaccumulation	
Fresh:	50
Salt:	500

ENVIRONMENTAL

Parameter	Value
Fresh Tox:	100
Salt Tox:	1000
Persistence	
River:	0.4
Lake:	1
Bioaccumulation	
Fresh:	50
Salt:	500

BENCHMARKS

AIR PATHWAY

Parameter	Value	Unit
NAAQS/NESHAPS:		µg/m3
Cancer Risk:	9.3E-03	mg/m3
Non Cancer Risk:	4E-02	mg/m3

GROUND WATER PATHWAY

Parameter	Value	Unit
MCL/MCLG:	5E-03	mg/L
Cancer Risk:	3.2E-02	mg/L
Non Cancer Risk:	9E-02	mg/L

SOIL EXPOSURE PATHWAY

Parameter	Value	Unit
Cancer Risk:	3.0E+02	mg/kg
Non Cancer Risk:	4E+02	mg/kg

RADIONUCLIDE

Parameter	Value	Unit
MCL:		pCi/L
UMTRCA:		pCi/kg
CANCER RISK		
Air:		pCi/m3
DW:		pCi/L
FC:		pCi/kg
Soil Ing:		pCi/kg
Soil Gam:		pCi/kg

SURFACE WATER PATHWAY

DRINKING WATER

Parameter	Value	Unit
MCL/MCLG:	5E-03	mg/L
Cancer Risk:	3.2E-02	mg/L
Non Cancer Risk:	9E-02	mg/L

HUMAN FOOD CHAIN

Parameter	Value	Unit
FDAAL:		ppm
Cancer Risk:	1.5E+00	mg/kg
Non Cancer Risk:	8E+00	mg/kg

ENVIRONMENTAL

Parameter	Value	Unit
ACUTE		
Fresh CMC:		µg/L
Salt CMC:		µg/L
CHRONIC		
Fresh CCC:		µg/L
Salt CCC:		µg/L